CHECKING THE VALIDITY AND RELIABILITY OF THE EMOTIONAL BURNOUT ASSESSMENT TOOL OF TURKISH UNIVERSITY STUDENTS

VERIFICANDO A VALIDADE E CONFIABILIDADE DA FERRAMENTA DE AVALIAÇÃO DE BURNOUT EMOCIONAL DE ESTUDANTES UNIVERSITÁRIOS TURCOS

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ABSTRACT

The emotional exhaustion assessment scale has been tested for validity and reliability in different cultures. In this study, The short version of the emotional exhaustion Assessment Tool Core (BAT-C) was originally developed by Schaufeli et al. (2020b) and was adapted to Turkish. The Turkish scale was applied to 359 students studying at a state university in the 2022-2023 academic year. The study is significant in data collection and providing university students with emotional exhaustion assessment experiences. The short version of the emotional Exhaustion Assessment Tool Core Scale consists of 4 sub-dimensions. In the adaptation study, the opinions of a total of six experts in the fields of translation and evaluation were taken. Reliability analyses were conducted, and a model fit test and confirmatory factor analysis (CFA) were organized. As reported, the emotional exhaustion Assessment Tool Core Scale's four-dimensional structure was confirmed. In this study, reliability analysis evaluated the scale's internal consistency and Cronbach's alpha value. The scale's overall internal consistency coefficient was determined to be 0.97. The Turkish and short version of the emotional exhaustion Assessment Tool Core Scale was confirmed by CFA analysis to be reliable and valid in the sample group

Keywords: burnout assessment, burnout assessment tool core scale, validation, reliability.

RESUMO

A escala de avaliação de exaustão emocional foi testada quanto à validade e confiabilidade em diferentes culturas. Neste estudo, a versão curta do Núcleo de Avaliação de Exaustão Emocional (BAT-C) foi originalmente desenvolvida por Schaufeli et al. (2020b) e foi adaptada para o turco. A escala turca foi aplicada a 359 alunos que estudam em uma universidade estadual no ano acadêmico de 2022-2023. O estudo é significativo na coleta de dados e no fornecimento de experiências de avaliação de exaustão emocional aos universitários. A versão curta do Núcleo de Avaliação de Exaustão Emocional consiste em 4 subdimensões. No estudo de adaptação, foram coletadas as opiniões de um total de seis especialistas nas áreas de tradução e avaliação. Análises de confiabilidade foram conduzidas e um teste de ajuste de modelo e análise fatorial confirmatória (CFA) foram organizados. Conforme relatado, a estrutura quadridimensional do Núcleo de Avaliação de Exaustão Emocional foi confirmada. Neste estudo, a análise de confiabilidade avaliou a consistência interna da escala e o valor alfa de Cronbach. O coeficiente geral de consistência interna da escala foi determinado como 0,97. A versão turca e curta da Escala Básica de Avaliação de Exaustão Emocional foi confirmada pela análise CFA como confiável e válida no grupo amostral.

Palavras-chave: avaliação de burnout, escala central do instrumento de avaliação de burnout, validação, confiabilidade

Introduction

One of the concepts that has attracted the attention of psychologists in recent years is the symptoms, causes and effects of emotional exhaustion. An increase in environmental demands and a decrease in a person's ability to respond to them can intensify psychological pressures and lead to emotional exhaustion. A review of the affective literature found that while researchers recognize burnout as a psychological disorder, they do not always agree on its causes. Zakirkish et al. (2024) defined emotional burnout as tiredness, irritability, and fatigue, which significantly reduce worker productivity and ability. According to Kuadey et al. (2024), emotional exhaustion is a concept that occurs when a person experiences disappointment due to unfulfilled expectations and needs (Kawadei et al., 2024; Zakirkish, Shekurnia, Hafizi, & Maniati, 2024). Furthermore, the researchers stated that emotional exhaustion is a state of complete exhaustion caused by commitments that require a significant amount of one's time, attention, and energy. This feeling may be physical, emotional or mental. The term emotional burnout has been defined in different ways by researchers in different professions, including in the fields of psychology, education, and even economics. However, in general, the majority of them, regardless of the situation, try to treat a specific emotion, mainly fatigue as

well as physical fatigue, frustration and despair, and in general, emotional exhaustion can be considered a disorder (Dewaele & Li, 2020). which is caused by a person's long-term exposure to mental pressure related to work and people, which will be accompanied by symptoms of physical and psychological-emotional collapse. The affected person's self-esteem is low and he experiences the feeling of being useless. Today, there is a perception that emotional burnout can occur in any job and evidence shows that this syndrome can be a great threat to all people who are engaged in snake. Emotional exhaustion can cause disorders such as fatigue, insomnia, family problems, lack of work and job dissatisfaction. Emotional burnout is a physical and psychological syndrome that leads to negative behavior and attitudes toward work and customers (Li, Zhang, & Jiang, 2024). Therefore, the attention of the management of organizations to the issue of emotional burnout improves mental health, improves interpersonal relationships, increases the quality-of-service delivery, and reduces the costs of early retirement and leaving the job. The concept of emotional exhaustion was first introduced in 1991 by the German psychologist Herbert Freudenberger. Freudenberger considers emotional burnout to be a state of fatigue and failure that occurs due to a person's self-sacrifice in the way of life or a relationship that does not lead to the desired result, studies conducted on emotional burnout of students have shown that compared University students, teenagers are at risk of more academic burnout and it has a negative effect on academic growth. It also shows the relationship between negative perfectionism, emotional exhaustion and intrinsic motivation. In a longitudinal study by Basque and Salemla Aro (2013), high school students between 16 and 18 years of age are at risk of increased feelings of burnout, loss of faith, and low self-efficacy. Also, when socioeconomic factors were taken into account, loss of religion was a significant predictor of dropping out (Bask & Salmela-Aro, 2013). Although psychological research has explored potential gender differences in academic burnout and burnout, no study has fully examined these changes by integrating academic and professional experiences. In other words, little is known about potential gender variables in working students regarding academic burnout (Fiorelli et al., 2022). Numerous studies have shown that compared to their male colleagues, women face

job pressure, challenges in career advancement, lower compensation, lack of support, and higher rates of harassment (Dennis, Ferraro, Pais, & dos Santos, 2024). According to Bianchi et al. (2019), all these factors can significantly increase the sources of stress experienced by female employees and increase the risk of burnout (Bianchi, Schoenfeld, & Loren, 2019). Farber believes that burnout is a state of physical, emotional and mental fatigue that is caused by direct and long-term exposure to people in stressful conditions, so burnout is extreme fatigue and a feeling of mistreatment. A person who does not get rid of this fatigue with rest and vacation. He also believes that job burnout is a state in which a person imagines himself to be less than others and feels that his work and actions are not taken into account, so comparing working students (WS) and non-working students (NWS) and in Considering any gender differences is important for studying burnout experiences. Therefore, alternative burnout questionnaires have been proposed, but none of the instruments fully address the above-mentioned problem. For example, some unidimensional questionnaires reduce burnout to little more than burnout, and fail to address its multidimensionality (e.g., the Burnout Measure (BM) (Pines & Aronson, 1988; Shirom Melamed Burnout Measure [SMBM], Shirom & Melamed, 200; Copenhagen Job Burnout Inventory (CBI) Christensen et al., 2005) (Christensen, Buritz, Viladsen, & Christensen, 2005; Malak-Pines & Aronson, 1988; Shirom & Melamed, 2006) Maslach's Burnout Inventory (Maslach & Jackson, 1981), which was originally intended for human resource workers, was used, resulting in a general version of the MBI as the definition expanded to include all professions. , MBI-General Survey (Gatari, Fleuren, Zijl, and Hülsheger, 2023) was created. It consists of three components: fatigue, doubt and professional effectiveness. Despite its widespread use, researchers have identified several issues with the MBI, including conceptual flaws, measurement problems, and limited applicability. Delikaris et al. (2014) found that the MBI fails to account for declines in cognitive functioning, such as reduced focus, concentration, and memory loss (Deligkaris, Panagopoulos, Montgomery, & Masura, 2014). Other questionnaires including the Bergen Emotional Burnout (BBI) developed by Salmela-Aro et al. (2011) and the Granada Job Emotional Questionnaire (GBQ) by De la Fuente et al. (2013) are

examples of multidimensional questionnaires that have the same conceptual framework and subscales as the MBI. They have changed the wording of the item to avoid copyright restrictions. Another assessment tool, the Oldenburg Emotional Burnout Inventory (OLBI) by Demerotti (2003), assesses emotional exhaustion and disengagement as separate aspects and includes negative and positive statements. However, it is worth noting that the use of positively worded emotional exhaustion items may complicate the assessment due to their potential impact on work engagement, as emphasized by González-Roma et al. (2006) (Demerouti, Bakker, Vardakou, & Kantas, 2003; Erkuş, 2012; Fornell & Larcker, 1981; González-Romá, Schaufeli, Bakker, & Lloret, 2006; Salmela-Aro, Hyönent, Tillemand, Hyönent, 2011).). In assessing emotional exhaustion, most studies have used the Maslach Emotional Exhaustion Inventory (MBI; Maslach & Jackson, 1981), which was originally developed for human resource professionals. As this definition expanded to include all occupations, a general version of the MBI, known as the MBI-General Survey (MBI-GS; Schaufeli et al., 1996), was developed. It consists of three components: burnout, cynicism, and professional efficacy. Despite its widespread use, researchers have identified several issues with the MBI, including conceptual flaws, measurement problems, and its general applicability. Delikaris et al. (2014) found that the MBI does not account for cognitive symptoms such as reduced focus, concentration, and memory loss (DiVincenzo et al., 2024). To address these limitations, Schaufeli et al. (1996) developed the Burnout Assessment Tool (BAT) as a more comprehensive approach to measuring emotional burnout. This tool combines deductive and inductive reasoning and defines burnout as a core workplace-related condition characterized by exhaustion and mental distance (W. B. Schaufeli, 1996). Emotional Exhaustion In addition, qualitative data from in-depth interviews were used to identify seven dimensions of emotional exhaustion: exhaustion, mental distance, emotional disturbance, cognitive impairment, depressed mood, psychological distress, and psychosomatic symptoms. These dimensions were classified as primary and secondary characteristics based on the theory of Schaufeli and Taris (2005) and survey findings (W. B. Schaufeli & Taris, 2005). In this study, fatigue emerged as the most commonly reported symptom

among participants, although it was not always a prerequisite for emotional exhaustion. Interviewees also highlighted symptoms such as mental distance, emotional strain, and cognitive impairment related to fatigue. In addition, this study identified three distinct variables: depressed mood, psychological distress, and psychosomatic symptoms, which were considered secondary because they are not unique to emotional exhaustion and can co-occur with other conditions such as mood and anxiety disorders as well as cancer. be related (Almaleki, Mojali, Alutman, Masvadi, & Elagil, 2017, Altunisik, Kuskun, Bayraktaraoglu, & Yildirim, 2012). This research defined emotional burnout as a state of work-related burnout experienced by employees and characterized by excessive fatigue, decreased cognitive and emotional regulation, and mental distance. It was noted that existing scales mainly focus on emotional exhaustion in high-intensity work environments and ignore groups such as part-time workers and students (Büyüköztürk, Akgün, Kahveci, & Demirel, 2004; Byrne, 2013; Chen, 2007). Various measures of emotional exhaustion have been developed over time, including the Maslach Emotional Exhaustion Scale (MBI), the Oldenburg Emotional Exhaustion Scale (OLBI), and the Copenhagen Emotional Exhaustion Scale (CBI). The MBI was the most widely used scale, appearing in more than 80% of studies. However, recent research has highlighted fundamental deficiencies in existing scales, which led to the development of the Emotional Burnout Assessment Tool (BAT) by the Wilmar Schäfley and Hans de Wet Consortium in 2015. BAT aims to address the limitations of current scales and has demonstrated superior psychometrics. properties (Cheung & Rensvold, 2002; Ching et al., 2024; de la Fuente et al., 2013). The existing literature lacks a Turkish scale that specifically assesses the level of emotional exhaustion of students, taking into account their employment status and gender. Therefore, the translation of the short version of the BAT (Schaufeli et al., 2020b), which has a stronger psychometric content, into Turkish provides an effective measurement tool for survival studies. In terms of gender effect, it is predicted that there will be differences in the burnout levels of male and female students. Furthermore, it is anticipated that variances in emotional exhaustion between undergraduate and graduate students will be determined in light of conflicting results in the literature.

In addition, students who are employed are predicted to be more prone to emotional burnout. As a result, the following hypotheses were developed. Hypothesis 1: There will be a difference between the emotional exhaustion of male and female students. Hypothesis 2: Working students will have the highest risk of experiencing emotional burnout.

Method

Participants

To test the linguistic validity of the short version of the emotional burnout assessment instrument (BAT-C), data were collected from 359 university students who were studying English language education. 359 students from the 2022-2023 academic year of Ataturk University (197, 54.9% female, 162, 45.1% male) participated in the construct validity research of the scale. 44 students (12.3%) are undergraduate students, 90 students (25.1%) are first-year students, 68 students (18.9%) are second-year students, 90 students (25.1%) are third-year students, and 67 (18.7%) are fourth-year students. were Purposive sampling method was used with standard sampling. The participants consented to have their data used in the study and the ethics committee approved the study.

Table 1 **–** Distribution of students participating in the research

Variables		N	%
Gender	Female	197	54.9
	Male	162	45.1
Years of enrollment	Prep- school	44	12.3
	First-year	90	25.1
	Second-year	68	18.9
	Third-year	90	25.1
	Fourth-year	67	18.7

The fact that they were enrolled in a state university was used as a criterion. The sample size was determined by taking into account the criteria that the scale's number of items should be at least five times (MacCallum et al., 1999; Erkuş, 2012)

or ten times (Tavşancıl, 2006). A 10:1 ratio between respondents and items, or at least 10 participants per scale item, is required by the standard.

Instrument

The Emotional Exhaustion Assessment Tool (BAT) is a recently developed emotional exhaustion assessment that Schaufeli et al. (2020a) was introduced. In addition, along with the initial 23-item version of the Emotional Burnout Assessment Tool (BAT), a shorter 12-item version was also designed (Schaufeli et al., 2020b). The short version of The Burnout Assessment Tool Core (BAT-C), which Schaufeli et al. (2020b) developed served as the basis for the study instrument. The main scale included four sub-dimensions, each with three items: fatigue, mental distance, cognitive impairment, and emotional impairment. Each item was scored on a Likert scale, with 1 being "never" and 5 being "always". In the main scale, using cross validation, the sample was randomly divided into two parts. In the first sub-sample (750 participants), the structure of the short version of the BAT-C was examined using exploratory factor analysis (EFA). Factors were extracted using the principal axis factoring method followed by a diagonal rotation. The appropriateness of this study's data was evaluated by measuring the sampling adequacy of Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity. As a general rule, 0.40 is considered the minimum loading required for an item, while cross-loading items are defined as items loading 0.30 or higher on two or more alternative factors (Field, 2013). The initial scale also assessed the factorial structure and invariance of ratings across groups. Once invariance of assessments was established, analysis and understanding of group means became possible (Sorgente et al., 2021). Confirmation that the factorial structure (i.e., configural invariance), item factor loadings (i.e., weak invariance), item intercepts (i.e., strong invariance), and item residual variances (i.e., precise invariance) are equivalent in the compared groups (eg, WS and NWS) is required for measurement invariance (Little, 2013). Fiorelli et al. (2022) conducted a multistep process in which each step was compared to the less constrained model (eg, weak invariance vs. configural invariance) to determine whether robust measurement invariance was achieved.

(Cheung & Rensvold, 2002). Additionally, Chen (2007) suggested using a delta-root-mean-square error of approximation (RMSEA) of 0.015 to assess vector invariance. Furthermore, in addition to the CFI and RMSEA standards, each model must demonstrate an adequate data fit to be acceptable. When the CFI number was 0.90 or greater and the standardized root mean square residual (SRMR) and RMSEA were 0.08 or less, researchers considered the model to fit the data (Hu & Bentler, 1999). For this research, first the relevant permissions were obtained for adapting the scale to Turkish language. Subsequently, the necessary ethical permission was obtained to conduct the research (Decision of Atatürk University Ethics Committee dated January 20, 2023 and No. 5/24). To establish language equality, this scale was first translated into Turkish. Due to translation, validity and reliability issues were observed in several studies (Meyer & Eley, 2006; Schellhase, 2009; Stes et al., 2010) and more research is needed on this issue. An important concern for validity and reliability issues arising from linguistic and cultural variations in the adaptation of scales is linguistic equivalence (Geisinger, 1994). Three subject matter experts with proficiency in English translated the instrument from English to Turkish before creating the Turkish version of the instrument. Three field experts translated Trabzarra from English to Turkish, and two Turkish and two field experts reviewed the scale completely. Then the scale was evaluated by one of the evaluation experts and the final form of the scale was formed. After this process and positive evaluation, the last type of scale was completed. This scale was administered online to university students. The average response time of the scale is 3 minutes.

Data Analysis

Item analysis, factor analysis, and the reliability coefficient were examined within the scope of the reliability analysis of the adapted scale. To determine the distribution status of the research data, skewness and kurtosis values were checked. Frequency analysis was used to obtain descriptive information about the research participants.

Confirmatory Factor Analysis (CFA) was used to determine how healthy the factor-item distributions obtained were. Within the scope of the research, statistical analysis was done with the SPSS 22.0 statistical package program, and DFA was done with the AMOS statistical package program. For the reliability of the scale, Cronbach Alpha (α) analyses for internal consistency were performed. The explained mean-variance AVE (average variance extracted) value and the CR (composite reliability) coefficients for composite reliability were examined.

Results

For reliability analysis, the Cronbach alpha coefficient is commonly used. The Cronbach Alpha coefficient should be at least 0.7 (Altunışık et al., 2012). As a result of the reliability analysis, it was determined that the scale and its sub-dimensions had high reliability. Concordance and discriminant validity are significant indicators of a scale's construct validity. Concordance validity considers AVE and CR values, which provide information about the concordance of things gathered under the same factor. If the AVE number computed for the factors is higher than 0.5, the scale is considered to have convergent validity. If the AVE number for any component is less than 0.5, the scale lacks convergent validity as the variation caused by measurement error exceeds the variance explained by that component (Fornell & Larcker, 1981). The computed CR coefficient for the variables is a coefficient with values ranging from 0 to 1, and it is anticipated to be higher than 0.7 for the scale to have congruent validity (Kartal & Bardakçı, 2018). The AVE values for the MDS sub-dimensions "Exhaustion, Mental Distance, Cognitive Distance, and Emotional Distance" are 0.89, 0.71, 0.91, and 0.91, respectively, and the CR indices for the four variables are 0.96, 0.87, 0.97, and 0.97, respectively. These values provide solid proof for the scale's congruent validity.

Table 2 – Reliability analysis results

Scale and Sub-Dimensions	Cronbach Alpha	Number of Items	AVE	CR
BAT-C	.971	12		
Exhaustion	.966	3	.896	.962
Mental Distance	.851	3	.717	.876
Cognitive Distance	.968	3	.916	.970
Emotional Distance	.961	3	.915	.970

Confirmatory Factor Analysis (CFA)

CFA tests whether there is a sufficient level of relationship between the factors determined by exploratory factor analysis, which variables are related to which factors, whether the factors are independent from each other, and whether the factors are sufficient to explain the model (Özdamar, 2004). The analyses and subsequent CFA testing proved the validity and reliability of the scale structures used. CFA was performed for the scale structure, and the limit values of fit indices accepted by Büyüköztürk et al. (2004) were taken as the basis of the research.

For the testing of Confirmatory Factor Analysis (CFA) prerequisites, the first of the prerequisites for performing the CFA analysis is the adequacy of the sample size. It is desired that the number of samples be at least 10 times the number of items. Considering that the short version of the BAT-C scale in this study consisted of 12 items and the sample size was 359, the first assumption required for the CFA analysis was provided. Another prerequisite for performing CFA analysis is that the data collected in the study show a normal distribution and do not contain outliers. To determine whether the data obtained in this study showed a normal distribution, skewness, and kurtosis values were checked. It has been determined that the research data are within the limits of -1 to +1 (Hair et al., 2013; Gürbüz & Şahin, 2016), which is necessary for accepting that the research data have a normal distribution (Table 3). In addition, it was determined that there are no outliers with box-plot plots. These results indicate that the other prerequisite required for DFA analysis is met.

CFA was carried out as a result of meeting the prerequisites such as sufficient sample size, normal distribution of the research data, and absence of outliers.

Table 3 – Normality analysis results

Scale and Sub-Dimensions	Skewness	Kurtosis
BAT-C	-.010	-.260
Exhaustion	.949	.698
Mental Distance	-.076	-.906
Cognitive Distance	-.864	.053
Emotional Distance	-1.271	1.308

Confirmatory Factor Analysis Results

The second-level factorial structure of the short version of the BAT-C scale, which consists of four sub-dimensions and a total of 12 items, was tested using the AMOS 20 package program. Due to the normal distribution of the data, the maximum likelihood calculation method was used (Gürbüz & Şahin, 2016). Since the RMSEA value obtained as a result of the first CFA application was not within the acceptable limits, a covariance was drawn between e10 and e12 within the scope of the modification indicators, and the analysis was repeated. The obtained CFA results are presented in Figure 1.

Figure 1 – CFA results
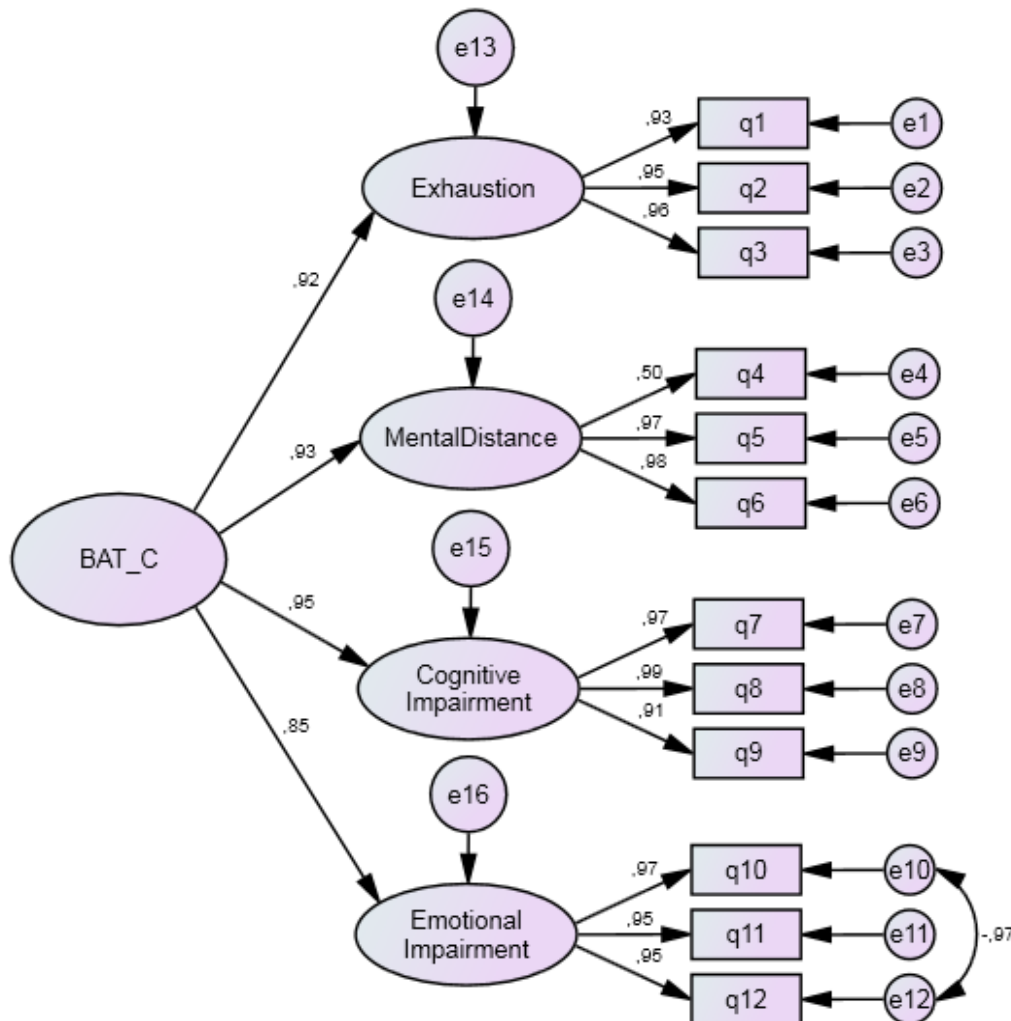
When the fit index values (Table 4) are examined, it is seen that the fit index values obtained as a result of CFA are within the relevant reference ranges. The fit index values derived from the confirmatory factor analysis performed on the model shown in Table 4 are $x^2/sd=3.203$, GFI=0.932, CFI=0.984, TLI=0.978, and RMSEA=0.078. The compliance values were evaluated by taking into account the reference values of Byrne (2011), Gürbüz and Şahin (2021), and Karagöz (2021).

Table 4 – Fit index values

Indexes	Good Fit	Acceptable Fit	Results	Evaluation
X^2/df	$X^2/df < 3$	$3 < (X^2/df) < 5$	3.203	Acceptable Fit
IFI	$IFI > 0.95$	$IFI > 0.90$	.984	Good Fit
TFI	$TLI > 0.95$	$TLI > 0.90$	.978	Good Fit
CFI	$CFI > 0.95$	$CFI > 0.90$	.984	Good Fit
GFI	$GFI > 0.95$	$GFI > 0.85$	.932	Acceptable Fit
AGFI	$AGFI > 0.95$	$AGFI > 0.85$	.892	Acceptable Fit
RMSEA	$RMSEA < 0.05$	$TMSEA < 0.08$	.078	Acceptable Fit
SRMR	$SRMR < 0.05$	$SRMR < 0.08$	.0237	Good Fit

These results show that the data obtained from the research are compatible with the predicted institutional infrastructure of the short version of the BAT-C scale (four factors) and that construct validity is provided.

Discussion

In this research, we adapted the short version of the Emotional Exhaustion Assessment Tool (Schaufeli et al., 2020b) to Turkish and conducted a reliability study (W. Schaufeli, De Witte, & Desart, 2019). This scale was implemented for 359 students and includes 4 dimensions and 12 items including skill dimension, performance approach dimension and performance-avoidance dimension. Fiorelli et al. (2022) focused on the effect of student gender and academic engagement status on academic burnout during scale development (Fiorelli et al., 2022). We found several studies on emotional exhaustion scales that, with the research of Padayar et al., 2016; Rees et al. 2015, who extensively examined the effect of gender on academic burnout, were consistent. However, less attention has been paid to the status of students as employees, especially when considering the interaction between gender and the work status of being engaged in education. In addition, traditional measures of emotional burnout such as the Maslach Emotional Burnout Questionnaire - Student Survey, the Oldenberg Emotional Burnout Questionnaire, the Academic Burnout Questionnaire and the Academic Burnout Questionnaire (SBI) (Payedar, Amirhoshengi, & Tagvi, 2017; Rais, Xanthopoulos, & Tessa). 2015).

Also, some researchers have ignored many of the basic indicators of emotional exhaustion syndrome (Hoferichter, Raufelder, Schweder, & Salmela-Aro, 2022; Puranitee et al., 2019). Therefore, before using it in our study to measure university students' emotional exhaustion as a complex and multifaceted phenomenon, we examined the continued validity of the short version of the BAT-C across gender and academic employment status. Our initial hypothesis predicts significant differences in levels of emotional exhaustion between male and female students, and the results of our preliminary analysis confirm this. Based on Zumbo and Koh's (2005) invariance test, the short version of the BAT-C performed similarly in both undergraduate and graduate students, as well as among boys and girls. The results of a validation study of the short version of the BAT-C in a sample of Portuguese and Brazilian employees are also consistent with the results recently presented by Sinwal et al. (2022) regarding measurement invariance across gender (Sinval, Vazquez, Hutz, Schaufeli, & Silva, 2022; Zumbo & Koh, 2005). After conducting our research, we found that the present study is the first to examine the measurement invariance of the short version of the BAT-C across genders using a sample of university students. It is worth noting that there was no Turkish culture-specific burnout scale in terms of gender and job status, which makes our research noteworthy (Frajerman, Morvan, Krebs, Gorwood, & Chaumette, 2019; Geisinger, 1994). In our literature review, we observed that although gender has had an effect on burnout levels in the past, results have been inconsistent. Even after adjusting for study programs, we did not find any significant variation in burnout levels by academic status and study engagement or an association between student gender and worker status, which supports the study by Fiorilli et al. (2022). Our results also show that female students experience higher levels of fatigue, emotional disturbance, and cognitive impairment compared to male students. However, no differences were found in the subjective distance dimension of the BAT.

Conclusions

According to the results of the research, we conclude that the short version of BAT-C is a satisfactory tool that exceeds the limitations of conventional emotional exhaustion measurement, which is based on three classic factors. More specifically, the instrument is applicable to a wide range of student populations and provides a wider range of indicators and a valid tool for further cross-cultural and comparative research. Most importantly, our findings show that gender significantly affects university students' initial perception of fatigue experience. These results suggest two specific strategies to prevent emotional exhaustion. First and foremost, female students are more prone to emotional exhaustion, especially in terms of experiencing emotional exhaustion, fatigue, and feelings of inability to manage. Second, focusing on girls' high risk may lead to overlooking boys' experiences of emotional exhaustion. In fact, female students showed higher levels of emotional exhaustion when assessing risk factors. However, previous research has shown that they invest more in their academic careers. On the contrary, male students show a high degree of pessimism towards the academic environment despite the low level of emotional exhaustion (Tuominen-Soini & Salmela-Aro, 2014). These factors may have different effects on the college employment of boys and girls, which makes it necessary to implement separate prevention efforts.

Limitations

This study also has its shortcomings. First and foremost, conducting the survey entirely online at a single time and having respondents rate themselves without using a separate data source may have introduced common method bias. Proactive measures were implemented, including the use of previously validated and examined scales for reliability and validity, and personal information privacy was promoted among participants in compliance with the recommendations of Podsakoff et al. (2003). Another limitation of this study was its exclusive implementation within a single university, thereby restricting the applicability of

the findings. Therefore, the data interpretation should be approached with caution, considering that the study participants did not come from multiple universities.

Suggestions

In this context, the curriculum, materials, and exams need reorganization and positive student support, as per student and teacher suggestions. By increasing the social success of students, measures can be taken regarding many academic burnout problems. It is thought that the Burnout Assessment Tool Core Scale will shed light on psychologists, psychological counselors, and other experts working in the field. The scale can be used in schools and for individual and group guidance activities. The reliability and validity studies of the scale were conducted on university students. Comparative research can be done by working with another sample group. In addition, it is recommended that appropriate techniques such as observation and interviewing, which are qualitative research approaches, be used together with the scale in future research.

Disclosure statement

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Ethical approval

All procedures performed in studies involving human participants were by the ethical standards of the institutional and/or national research committee.

Data availability statement

Data will be made available upon request.

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